Amendment to the Claims

1. (Currently Amended) A composition comprising:

a vaccine preparation in unit dosage form including:

an effective amount of an antigen;

an adjuvant component comprising phytol, isophytol, or a phytol derivative; and optionally a carrier.

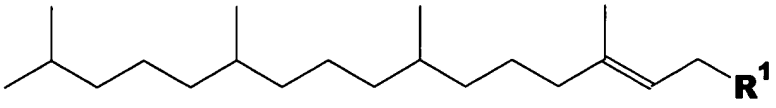
2. (Original) The composition of claim 1 wherein the adjuvant component comprises phytol.

3. (Original) The composition of claim 1 wherein the adjuvant component comprises isophytol.

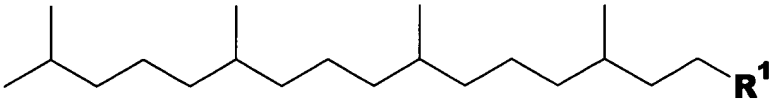
4. (Original) The composition of claim 1 wherein the adjuvant component comprises phytanol.

5. (Original) The composition of claim 1 wherein the adjuvant component comprises a phytol derivative selected from the group consisting of: phytanol; 1-chloro-3,7,11,15-tetramethyl hexadec-2-ene; iodo-3,7,11,15-tetramethyl hexadeca-2-ene; 1-amino-3,7,11,15-tetramethyl hexadec-2-ene; 3,7,11,15-tetramethyl-hexadec-2-en-1-al; 3,7,11,15-tetramethyl-1-hexadecanal; 3,7,11,15-tetramethyl-1-hexadec-2-enyl acetate; 3,7,11,15-tetramethyl-1-hexadecanyl acetate; 1-chloro-3,7,11,15-tetramethyl hexadecane; 1-iodo-3,7,11,15-tetramethyl hexadecane; 1-amino-3,7,11,15-tetramethyl hexadecane; 1-methyl amino-3,7,11,15-tetramethyl hexadecane; stereoisomers and mixtures thereof.

6. (Original) The composition of claim 1 wherein the adjuvant component comprises phytol or a phytol derivative of the formula I or II:



I



II

wherein R^1 is selected from the group of chemical moieties, ions, or radicals consisting of: Br^-, Cl^-; I^-; $-NH_2$, $-NO_2$, OH, $PO_4^=$, HPO_4^-, NHR^2, $OC(O)R^2$, OR^2, wherein R^2 is a hydrocarbyl having 1 to 10 carbon atoms or a carbohydrate.

7. (Original) The composition of claim 1 wherein the antigen includes a T-independent antigen.

8. (Original) The composition of claim 7 wherein the antigen is selected from the group consisting of: polysaccharides, pneumococcus polysaccharides, bacterial lipopolysaccharides, synthetic lipoolysacchrarides, and hapten-polysaccharide conjugates.

9. (Original) The composition of claim 1 wherein the antigen includes a T-dependent antigen.

10. (Original) The composition of claim 9 wherein the antigen is selected from the group consisting of: proteins, peptides, lipoproteins, glycoproteins, ganliosides, cerebrosides, nucleoproteins, eukaroytic cellular isolates, and prokaryotic cellular isolates.

11. (Original) The composition of claim 1 wherein the carrier is sterile water at pH 7.0.

12. (Currently Amended) The composition of claim 1 wherein the carrier ~~is~~ comprises physiological buffers that include carbonates, bicarbonates, phosphates.

13. (Original) The composition of claim 1 wherein the vaccine composition is an oil-in-water emulsion.

14. (Original) The composition of claim 13 comprising a surfactant or emulsifier.

15. (Original) The composition of claim 14 wherein the emulsifier is selected from the group consisting of: phospholipids such as phosphoglycerides, lysophosphoglycerides, spingomyelin, phosphatidyl choline, phosphatidyl ethanolamine, phosphatidyl inositol and mixtures thereof.

16. (Original) The composition of claim 1 wherein the vaccine composition comprises the phytol or the phytol derivative and the antigen in a weight ratio of between about 1:4 to about 1:1.

17-26. (Canceled)

27. (Original) A composition comprising a vaccine preparation in unit dosage form including an effective amount of an antigen conjugated directly to phytanol or a phytol derivative and a surfactant mixed in equal volume, and optionally a carrier or buffer solution.

28. (Original) The composition of claim 27 comprising between 4 and 100 micrograms of the antigen conjugated directly to phytanol or a phytol derivative.

29. (Original) The composition of claim 27 comprising between about 0.05 to about 0.1 % (wt/v) of the surfactant.

30. (New) A composition comprising:

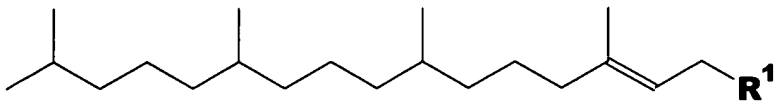
a vaccine preparation in unit dosage form including:

an effective amount of an antigen;

an adjuvant component comprising a phytol derivative; and optionally a liquid carrier.

31. (New) The composition of claim 30 wherein the adjuvant component comprises a phytol derivative selected from the group consisting of: phytanol; 1-chloro-3,7,11,15-tetramethyl hexadec-2-ene; iodo-3,7,11,15-tetramethyl hexadeca-2-ene; 1-amino-3,7,11,15-tetramethyl hexadec-2-ene; 3,7,11,15-tetramethyl-hexadec-2-en-1-al; 3,7,11,15-tetramethyl-1-hexadecanal; 3,7,11,15-tetramethyl-1-hexadec-2-enyl acetate; 3,7,11,15-tetramethyl-1-hexadecanyl acetate; 1-chloro-3,7,11,15-tetramethyl hexadecane; 1-iodo-3,7,11,15-tetramethyl hexadecane; 1-amino-3,7,11,15-tetramethyl hexadecane; 1-methyl amino-3,7,11,15-tetramethyl hexadecane; stereoisomers and mixtures thereof.

32. (New) The composition of claim 30 wherein the adjuvant component comprises a phytol derivative of the formula I:



I

wherein R^1 is selected from the group of chemical moieties, ions, or radicals consisting of: Br^-, Cl^-; I^-; $-NH_2$, $-NO_2$, OH, $PO_4^=$, HPO_4^-, NHR^2, $OC(O)R^2$, and OR^2, wherein R^2 is a hydrocarbyl having 1 to 10 carbon atoms or a carbohydrate.

33. (New) The composition of claim 32 wherein R^1 is selected from $-NH_2$ or NHR^2 wherein R^2 is a hydrocarbyl having 1 to 10 carbon atoms or a carbohydrate.

34. (New) The composition of claim 32 wherein R^1 is selected from the group of chemical moieties consisting of: OH, $OC(O)R^2$, and OR^2, wherein R^2 is a hydrocarbyl having 1 to 10 carbon atoms or a carbohydrate.

35. (New) The composition of claim 32 wherein R^1 is selected from the group of chemical moieties consisting of: OH, $PO_4^{=}$, and HPO_4^{-}.

36. (New) The composition of claim 32 wherein R^1 is selected from the group of chemical moieties consisting of: Br^{-}, Cl^{-}; and I^{-}.

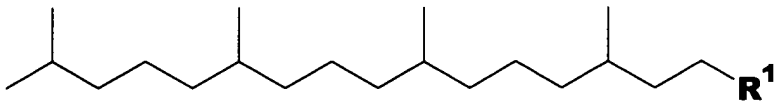
37. (New) The composition of claim 32 comprising an emulsifier selected from the group consisting of: phospholipids such as phosphoglycerides, lysophosphoglycerides, spingomyelin, phosphatidyl choline, phosphatidyl ethanolamine, phosphatidyl inositol and mixtures thereof.

38. (New) The composition of claim 32 comprising a surfactant selected from the group consisting of: mannide monooleates, 1,4-sorbitan, mono- and triesters, and polyoxyethylene derivatives of stearic acid.

39. (Original) The composition of claim 32 wherein the antigen is selected from the group consisting of: polysaccharides, pneumococcus polysaccharides, bacterial lipopolysaccharides, synthetic lipoolysacchrarides, and hapten-polysaccharide conjugates.

40. (Original) The composition of claim 32 wherein the antigen is selected from the group consisting of: proteins, peptides, lipoproteins, glycoproteins, ganliosides, cerebrosides, nucleoproteins, eukaroytic cellular isolates, and prokaryotic cellular isolates.

41. (New) The composition of claim 30 wherein the adjuvant component comprises a phytol derivative of the formula II:



II

wherein R^1 is selected from the group of chemical moieties, ions, or radicals consisting of: Br^{-}, Cl^{-}; I^{-}; $-NH_2$, $-NO_2$, OH, $PO_4^{=}$, HPO_4^{-}, NHR^2, $OC(O)R^2$, OR^2, wherein R^2 is a hydrocarbyl having 1 to 10 carbon atoms or a carbohydrate.

42. (New) The composition of claim 41 wherein R^1 is selected from $-NH_2$ or NHR^2 wherein R^2 is a hydrocarbyl having 1 to 10 carbon atoms or a carbohydrate.

43. (New) The composition of claim 41 wherein R^1 is selected from the group of chemcial moieties consisting of: OH, $OC(O)R^2$, and OR^2, wherein R^2 is a hydrocarbyl having 1 to 10 carbon atoms or a carbohydrate.

44. (New) The composition of claim 41 wherein R^1 is selected from the group of chemcial moieties consisting of: OH, $PO_4^{=}$, and HPO_4^{-}.

45. (New) The composition of claim 41 wherein R^1 is selected from the group of chemical moieties consisting of: Br^-, Cl^-; and I^-.

46. (New) The composition of claim 41 comprising an emulsifier selected from the group consisting of: phosphoglycerides, lysophosphoglycerides, spingomyelin, phosphatidyl choline, phosphatidyl ethanolamine, phosphatidyl inositol and mixtures thereof.

47. (New) The composition of claim 41 comprising a surfactant selected from the group consisting of: mannide monooleates, 1,4-sorbitan, mono- and triesters, and polyoxyethylene derivatives of stearic acid.

48. (Original) The composition of claim 41 wherein the antigen is selected from the group consisting of: polysaccharides, pneumococcus polysaccharides, bacterial lipopolysaccharides, synthetic lipoolysacchrarides, and hapten-polysaccharide conjugates.

49. (Original) The composition of claim 41 wherein the antigen is selected from the group consisting of: proteins, peptides, lipoproteins, glycoproteins, ganliosides, cerebrosides, nucleoproteins, eukaroytic cellular isolates, and prokaryotic cellular isolates.

50. (New) A method of enhancing the immunogenicity of a vaccine composition, said method comprising:

selecting an antigen eliciting a desired immunogenic response in a mammal, and

combining the antigen with the phytol derivative of claim 32 in a physiological acceptable carrier.

51. (New) A method of treating a patient, said method comprising: said method comprising:

preparing a vaccine formulation containing an antigen eliciting a desired immunogenic response in a mammal, and combining the antigen with the phytol derivative of claim 32 in a physiological acceptable carrier; and

administering the vaccine formulation to the patient.

52. (New) A method of enhancing the immunogenicity of a vaccine composition, said method comprising:

selecting an antigen eliciting a desired immunogenic response in a mammal, and

combining the antigen with the phytol derivative of claim 41 in a physiological acceptable carrier.

53. (New) A method of treating a patient, said method comprising: said method comprising:

preparing a vaccine formulation containing an antigen eliciting a desired immunogenic response in a mammal, and combining the antigen with the phytol derivative of claim 41 in a physiological acceptable carrier; and

administering the vaccine formulation to the patient.